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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF
FRANCOIS GUGUMUS
APPLICATION NO. 09/973,425
FILED: October 9, 2001
FOR: STABILIZED METALLOCENE POLYPROPYLENE

Art Unit: 1714
Examiner: Kriellion A. Sanders

Commissioner of Patents and Trademarks
Washington, D.C. 20231

DECLARATION UNDER 37 CFR 1.132

I, François Gugumus, a citizen of France and a resident of 4123 Allschwil, Switzerland, hereby declare:

That I was awarded the degree of a Doctor of Science by the University of Strassbourg, France, in 1965.

That I have been employed by Ciba-Geigy AG, now Ciba Specialty Chemicals Inc., as Chemist in the Additives Division and have been engaged in the field of stabilizers for polymers since 1970.

That I am an inventor of numerous U.S. Patents, for example Nos. 4,148,783; 4,692,486; 4,623,480 and 4,734,449 assigned to Ciba-Geigy Corp., now Ciba Specialty Chemicals Corp.

That I am the author of numerous technical articles relating to the same or closely related field of research, for example:

"Progrès dans la protection des materières plastiques contre le rayonnement UV", Kunststoffe-Plastics 22 (1975), 11-19;

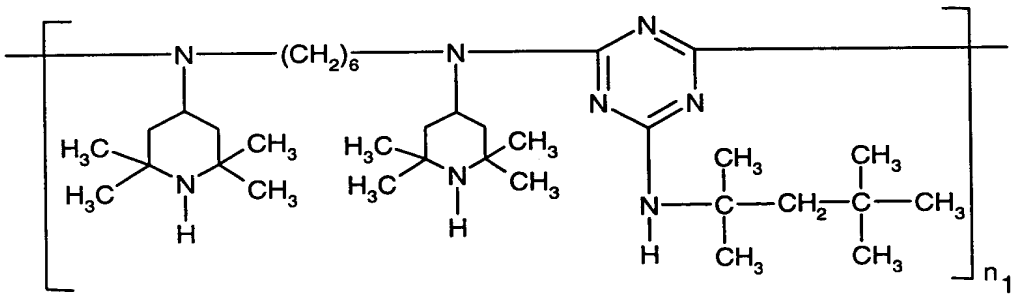
"Developments in the UV stabilization of polymers", Developments in Polymer Stabilization, Applied Science Publishers Ltd., London, 1979, 261-308;
"Contribution to polyethylene photooxidation", Angewandte Makromolekulare Chemie 158/159 (1988), 151-176;
"Antioxidantien", Kunststoffe 77 (1987), 1070-1107;
"Lichtschutzmittel", Kunststoffe 77 (1987), 1165-1210;
"The use of accelerated tests in the evaluation of antioxidants and light stabilizers", Developments in Polymer Stabilization, Applied Science Publishers Ltd., London, 1987, 239-289.

That I am the inventor of U.S. Patent Application No. 09/973,425.

That the experiments described in the following have been made under my supervision and the evaluation of the results has been done by myself.

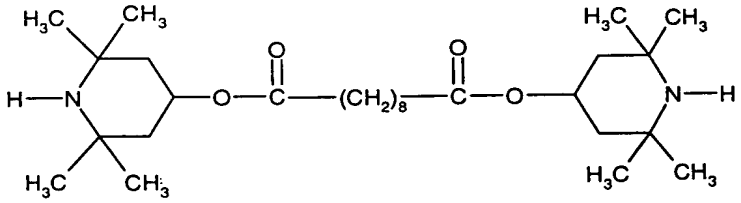
STABILIZERS USED:

Compound (A-I-1-a):
(CHIMASSORB 944 (RTM))



with n_1 being 4.5 (mean degree of polymerization).

Compound (B-I-2-a):
(TINUVIN 770 (RTM))



TEST METHOD:

Light stabilization of polypropylene films.

100 parts of the unstabilized polypropylene powder indicated in Table 1 are homogenized at 200°C for 10 minutes in a Brabender plastograph with 0.05 parts of pentaerythrityl tetrakis{3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate}, 0.10 part of tris(2,4-di-tert-butylphenyl) phosphite, 0.10 part of Ca stearate, 0.1 part of 2-{5-chloro-2H-benzotriazole-2-yl}-6-(1,1-dimethylethyl)-4-methylphenol and the amount of the stabilizer system indicated in Table 1. The material thus obtained is compression molded in a laboratory press between two aluminum foils for 6 minutes at 260°C to a 0.5 mm thick film which is immediately cooled to room temperature in a water-cooled press. Samples of 60 mm x 25 mm are cut out of these 0.5 mm films and are exposed in a ®WEATHER-OMETER Ci 65 (black panel temperature 63 ± 2°C, without water-spraying).

Periodically, these samples are removed from the exposure apparatus and their carbonyl content is measured with an infrared spectrophotometer. The exposure time ($T_{0.1}$) corresponding to the formation of a carbonyl absorbance of 0.1 is a measure for the efficiency of the stabilizer system. The values obtained are summarized in the following Table 1.

Table 1:

Stabilizer mixture	$T_{0.1}$ in hours *)	
	Conventional Polypropylene	"Metallocene Polypropylene"
0.05 % of the compound (A-I-1-a) and 0.05 % of the compound (B-I-2-a)		
	2200	2600

*) High values are desired.

The results shown above clearly reveal the superiority of the stabilized "metallocene polypropylene".

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 18th day of February 2003

François Gugumus

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